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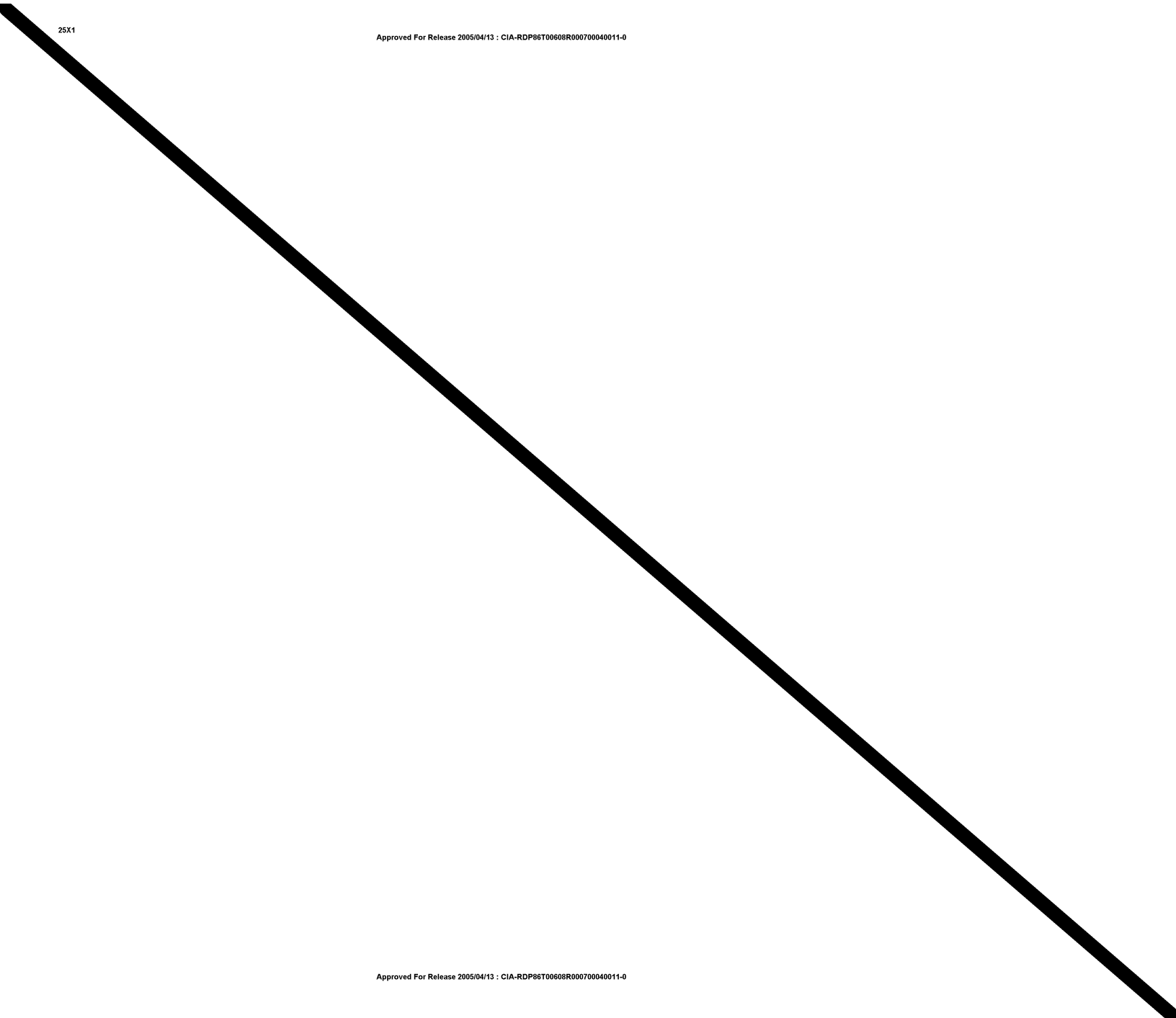

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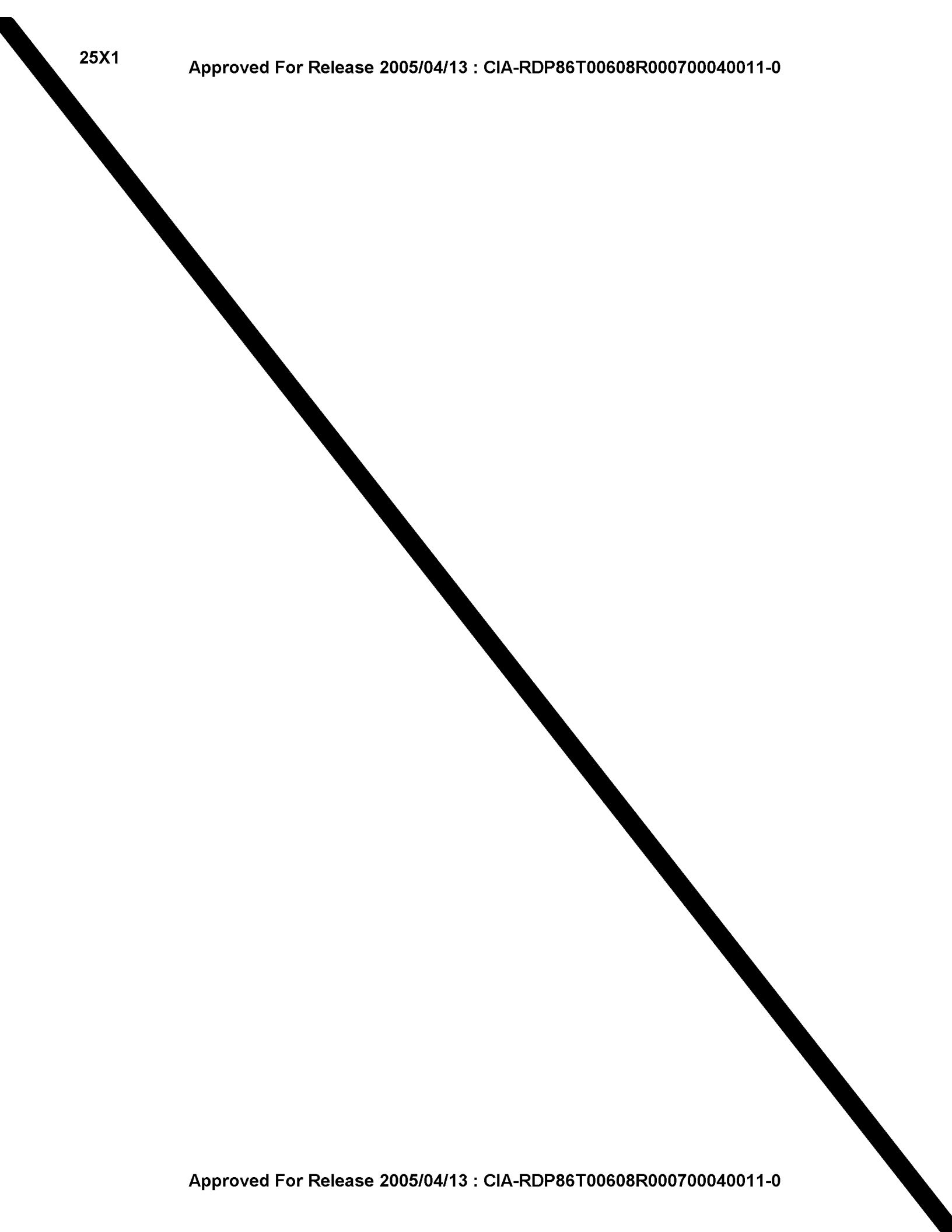

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[redacted]

WEEKLY SURVEYOR

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USSR AND EASTERN EUROPE

25X1 The preparations for the ASTP flight may provide the Soviets an improved capability in management and quality control techniques for manned spacecraft programs. [redacted]

25X1 [redacted]

A recent Soviet monograph discusses research in the field of bioacoustics. It concludes that dolphin sonar capabilities at least equal those of modern sonars. [redacted]

25X1 [redacted]

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WESTERN EUROPE

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After much debate, Sweden has decided to proceed with its planned nuclear program. Such action will stimulate domestic uranium production. [redacted]

A West German solar power station concept, first theorized 20 years ago, may have major microwave hazard implications. [redacted]

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MIDDLE EAST

[redacted]

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Saudia Arabia may obtain assistance from France for the construction of two reactors.

[redacted]

JAPAN AND PACIFIC ASIA

The Japanese government has made a decision to enforce strict emission standards despite

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the probable adverse economic effects to both domestic and foreign automotive industries.

[redacted]

To alleviate energy and environmental problems at home, the Japanese government has increased its support to the development of new efficient and clean industrial processes. Other countries stand to gain much from Japanese developments in pollution control and in other industrial techniques.

[redacted]

MISCELLANEOUS

The Cuban News Agency has reported that the Soviets will aid Cuba in building its first nuclear power plant. The Soviet reactors to be supplied probably will be the VVER-440 MW pressurized water reactor.

[redacted]

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[redacted]

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NUCLEAR ENERGY

Saudi Arabia Reported to Purchase French Nuclear Reactors: According to a Cairo newspaper, Saudi Arabia will build two nuclear reactors with the assistance of the French Atomic Energy Commission. Reportedly, a Saudi delegation is in Paris to negotiate agreements with the French for the two reactors, the training of Saudi scientists and for the supply of uranium to Saudi Arabia.

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Comment: No details are given in the Egyptian press report as to the size, location and schedule for construction of the two French reactors.

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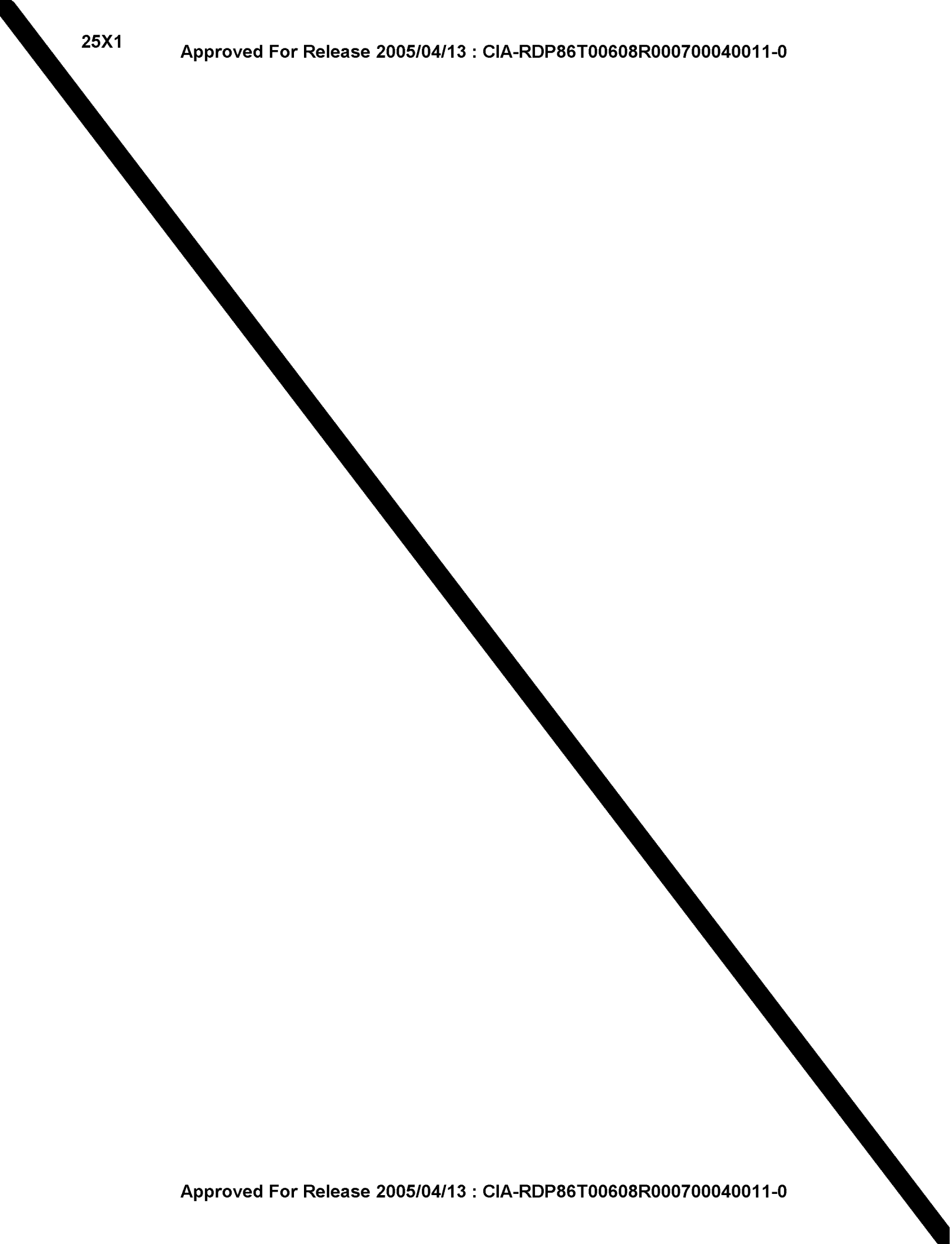

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Cuba To Purchase Soviet Reactors: According to the official Cuban News Agency, Prensa Latina, the Soviet Union will aid Cuba in building its first nuclear power plant. The plant, part of a 5-year development program ending in 1980, will contain two reactors and will produce 1,000 megawatts of electricity. The announcement stated that Cuba will receive both material and technological assistance in construction of the reactors. [redacted] 25X1

Comment: This is the first firm evidence of the Soviets supplying nuclear reactors to Cuba. The type of reactor most likely will be the Soviet VVER-440 pressurized water reactor (PWR), the only type exported by the Soviet Union. The VVER-440 has an installed capacity of 440 MW of electricity. At the present time, the Soviet VVER-440 reactor does not include safety features such as a containment system and an emergency core cooling system. It remains to be seen if Cuba 25X1 will try to obtain these two safety features for their reactors from a Western supplier, as was done by Finland which purchased an ice condenser containment system from Westinghouse.

[redacted]

Sweden to Proceed with Planned Large Nuclear Program: After a year of parliamentary debate, Sweden has decided to proceed with its planned nuclear program. Sweden is expected to become one of the largest consumers of nuclear power in the world. Four nuclear power reactors are now in operation and nine more are scheduled to go into operation in the next 10 years. By the year 2000, Sweden is expected to have a total of 24 nuclear reactors along its long coastline which would supply two-thirds of Sweden's power needs. [redacted] 25X1

Comment: The construction of 20 additional reactors in the next 25 years will add stimulus to the growing Swedish nuclear industry. Other information, however, indicates that only 7 or 8 reactors will be built by 1985 rather than nine. Sweden is already competing with other Western countries for nuclear power reactor sales. Since Sweden has ratified the NPT, the reactors in Sweden and those to be exported will be under IAEA safeguards. The spent fuel elements from its present reactors are sent to various European reprocessing plants. It is expected that Sweden will continue this policy with their future 25X1 reactors.

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The Swedish decision to proceed with their nuclear power program will stimulate domestic uranium production. Sweden has vast deposits of very low grade uranium. With the increase in uranium price throughout the world, these deposits may become economic and Sweden will then at least partially meet its requirements for nuclear fuel.

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SPACE

Major Soviet Benefits of ASTP May Be Improved Management and Quality Control Techniques: Cosmonaut A.A. Leonov, commander of the primary Soyuz crew for the forthcoming joint US/USSR ASTP (Apollo-Soyuz Test Project) flight was asked recently by a Soviet correspondent why there is apparently more documentation than for a conventional Soyuz flight. Leonov stated that the mission involves two spacecraft and each document must be produced in two languages.

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LIFE SCIENCES

Soviets Evaluate Dolphin Sonar Capabilities: A recent monograph by a senior Soviet acoustician discusses Soviet research in the field of bioacoustics. This field is described as being of high interest and now recognized as a separate technical discipline. Three of seven chapters are devoted to instrumentation and accurate evaluation of experimental measurements. The author identifies the principal current areas of Soviet marine bioacoustic research as (1) mechanisms of radiation and reception of signals, (2) identification of sonic images, and (3) communication and noise immunity. Of special interest is the final chapter on recent research findings which directly compares dolphin echoranging capabilities with those of modern sonars. The echolocation capabilities are characterized in terms of the number of resolution cells. The author quotes values on the order of 10^5 for modern passive sonars and 10^8 for modern active sonars. His calculations for dolphin sonar capabilities yield better values of 3.6×10^5 in a passive regime and 2.7×10^8 in an active mode. In a second comparison test, the author calculates an efficiency index for dolphins and for an air search radar, yielding roughly comparable values. Romanenko also suggests the application of a sophisticated optimization approach, recently proposed by the leading Soviet acoustician V.V. Olshevskiy, to provide a better comparison.

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[redacted]

Romanenko, Chief, Bioacoustics Laboratory, Institute of Evolutionary Morphology and Ecology of Animals, is the most prestigious acoustician connected with Soviet marine mammal studies. 25X1

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Romanenko's book, along with other recent Soviet publications in the area of marine bioacoustics, is reflective of a Soviet loosening of restrictions on publishing in this area. The majority of the Soviet

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literature citations given in this book are dated 1970 or later.

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Pollution Control Measures in Japan May Cause Economic Hardship: Interim auto emission standards passed by the Government of Japan probably will affect the sale of large motor vehicles, since they may not be able to meet the standards. These standards are of particular concern to US auto manufacturers, but they also will affect Japanese large car manufacturers such as Nissan. Since the Miki government is under growing public pressure to "do something" about pollution, the new emission standards will probably go into effect as planned despite high level approaches seeking modification of the standards. [redacted] 25X1

Comment: The Miki government has made a decision to enforce new strict emission standards despite the probable adverse economic affects to both domestic and foreign automotive industries. This action is in sharp contrast to other major industrial powers, most of whom are tending to delay implementation of pollution abatement laws because of the current economic down turn.

Japan's high population density and limited fresh water and land resources have intensified pollution problems dramatically. This has resulted in strong public pressure to adopt strict pollution abatement procedures. Until the quality of the Japanese environment has been improved sufficiently to convince the general population that health hazards no longer exist, the Japanese can be expected to continue stringent auto emission and other pollution abatement policies. [redacted] 25X1

West German Solar Power Station Concept May Have Major Microwave Hazard Implications: Twenty years ago a West German professor, Dr. Herman Oberth conceived the idea of collecting solar energy in space for use on the earth's surface. This concept has been revived recently and a solar power station is in the planning stage. This power station would consist of a satellite in a geostationary orbit which would collect solar energy on very large solar arrays, convert it to microwaves, and transmit it to a ground receiving station where it would be converted into electric power. [redacted]

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Comment: International proliferation of such solar power stations if not located away from population centers could be a major hazard.

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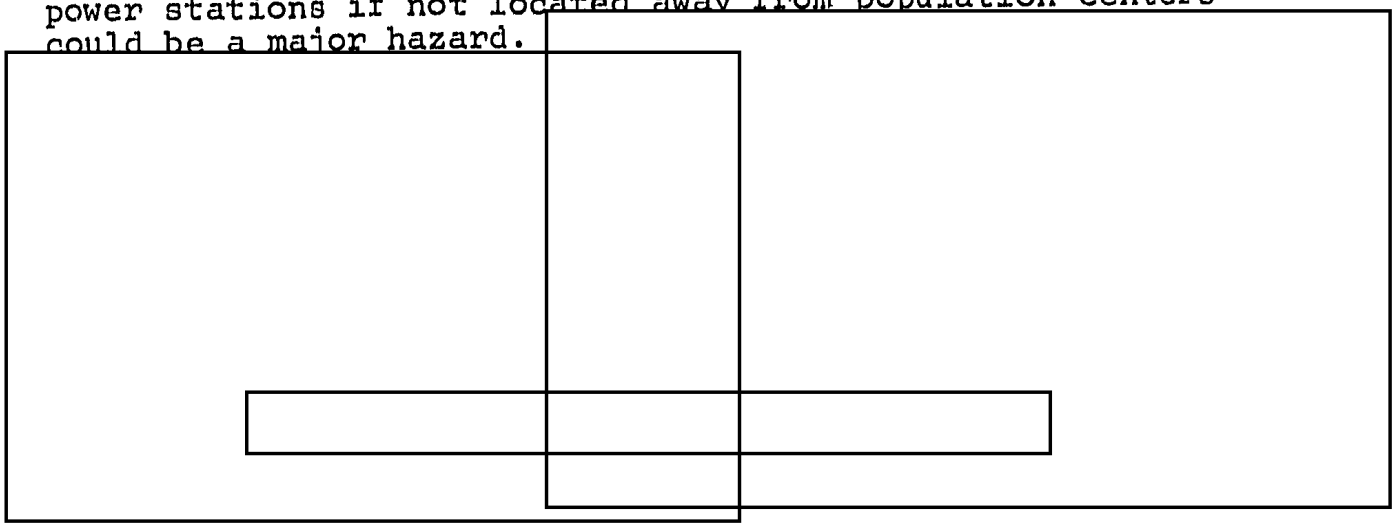

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SCIENTIFIC AND TECHNICAL RESOURCES

Maintenance of Japan's Domestic Basic Industry Depends on New Technology: According to the Industrial Policy Committee of the Federation of Economic Organizations (Keidanren), Japan should, despite its slowing economy, maintain and rebuild its heavy and chemical industries and thereby continue to be a major "industrial production center". Technology should be the key to overcoming the many restrictions that now exist. The machinery industry should be the focus for improving the industrial structure, along with greater specialization and coordination by small enterprises. The Keidanren (Industry) view is seen by some observers to conflict with that of the government's Ministry of International Trade and Industry (MITI), which has recommended that the basic industries be scaled down to reduce energy consumption.

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Comment: Until recently, the Japanese government has strongly encouraged the growth of heavy and chemical industry. But, with the energy crisis and intensifying environmental problems, the government has proposed for its long-range economic plan a new industrial structure based on the expansion of heavy industry abroad and on the promotion of smaller domestic nonpolluting science-based industries. The Keidanran's opposition to this policy is probably limited only to the curtailment of heavy industry at home. The government is expected to continue with this plan.

To alleviate energy and environmental problems at home, the government and industry have stepped up support to the development of new efficient and clean industrial processes. Japan's patents in this field have increased significantly and important new industrial systems have been introduced at home and sold abroad, e.g., new steel making methods. In applying this new technology, Japan eventually could remove some of the restrictions now imposed on the growth of its domestic basic industries, perhaps permitting Keidanren's policy to be adopted. Other countries also stand to gain much from Japanese developments in pollution control and in other new industrial techniques.

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